E 5707 (Pages : 2) Reg. No.....

Name.....

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, OCTOBER 2018

Third Semester

Core Course : 10 – GENETICS

(For B.Sc. Biotechnology)

[2013 to 2016 Admissions]

Time : Three Hours Maximum Marks : 80

Part A (Short Answer Questions)

Answer **all** *questions.*

Each question carries 1 *mark.*

1. Define gene pool.
2. State Hardy-Weinberg law.
3. What is linkage?
4. Define Autopolyploid.
5. Disease condition for XXY male.
6. Name any *two* vectors for gene therapy.
7. Which disease is called black urine disease?
8. What is G-banding?
9. What are acrocentric chromosomes?
10. Define Codominance.

(10 × 1 = 10)

Part B (Brief Answer Questions)

Answer any **eight** *questions.*

Each question carries 2 *marks.*

11. What is the significance of crossing over?
12. Describe a test cross.
13. Differentiate euploid and aneuploid.
14. What is epigenetics?
15. What are lethal genes? Cite one example.
16. What are cytoplasmic genes?

Turn over

17. State principle of dominance.
18. What is Turner's syndrome?
19. What are solenoid?
20. What is multiple allelism?
21. What are triplet repeat genetic diseases?
22. What is Down's Syndrome?

(8 × 2 = 16)

Part C (Short Essays)

Answer any **six** *questions.*

Each question carries 4 *marks.*

23. What is the genetic background of the disease – alkaptone urea.
24. Give a detailed account of mitochondrial genes.
25. Explain the law of Independent Assortment.
26. Describe the structural components of a chromosome.
27. Define Semidominance. Explain with an example.
28. Give an account of chromosome banding methods and its significance.
29. What is sex-influenced gene expression?
30. What are linked genes? Do they show recombination?
31. Justify : Genes are affected by environment.

(6 × 4 = 24)

Part D (Essays)

Answer any **two** *questions.*

Each question carries 15 *marks.*

32. Describe the types of gene interactions and their effects.
33. Describe the variations in chromosome number of illness associated with the condition.
34. Explain the sex determination mechanisms in mammals. Give an account of dosage compensation.
35. Describe the basic principles of population genetics. What are the factors leading to change in allele frequency distribution in a population?

(2 × 15 = 30)